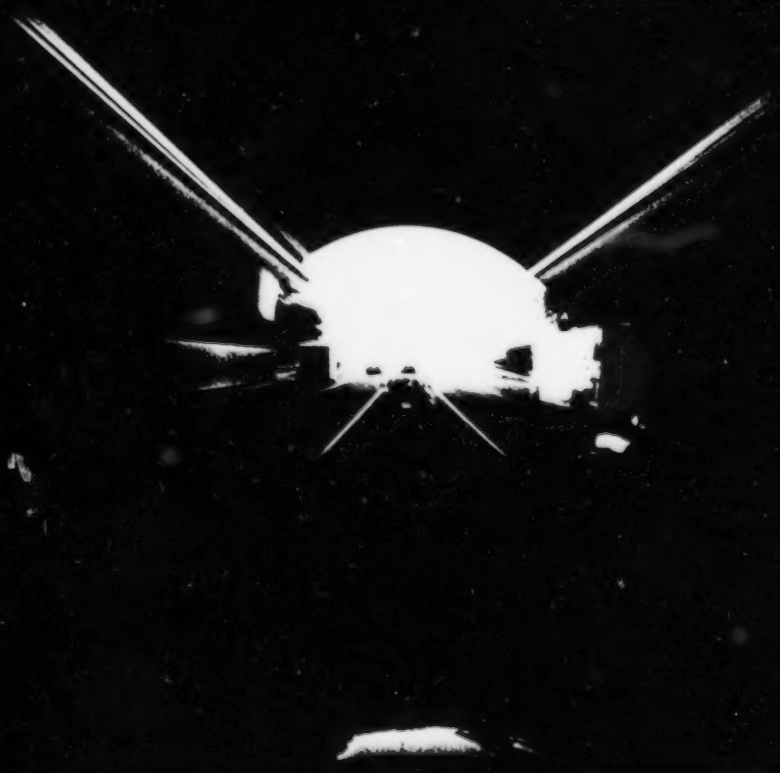
Transport Canada Transports Canada

Road safety vision

Making Canada's roads the safest in the world

update 1999



CANADIAN COUNCIL OF MOTOR TRANSPORT ADMINISTRATORS
CONSEIL CANADIEN DES ADMINISTRATEURS EN TRANSPORT MOTORISÉ

CCMTA is a non-profit organization comprising representatives of the provincial, territorial and federal governments of Canada which, through the collective consultative process, makes decisions on administration and operational matters dealing with licensing, registration and control of motor vehicle transportation and highway safety.

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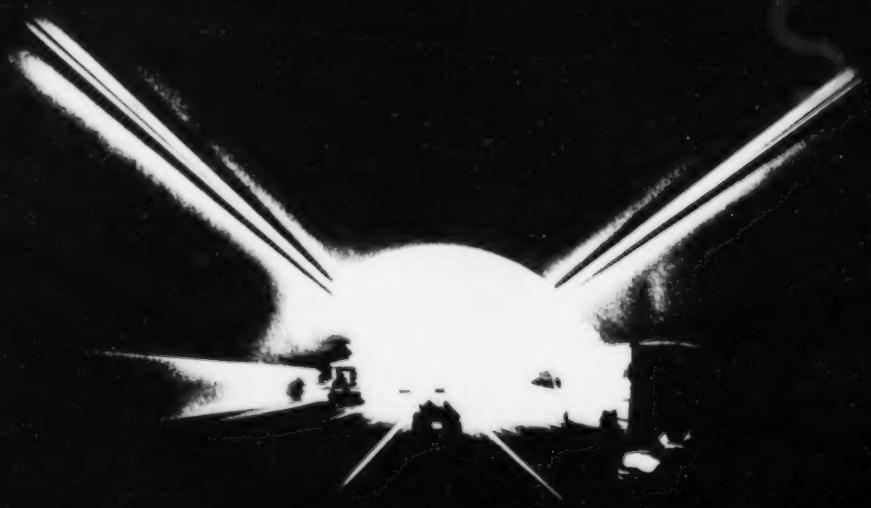
Road safety in canada – still a critical issue

Road collisions continue to account for more than 90 percent of all transportation-related deaths. We have the know-how to reduce this number substantially; but we need to do more if we are to keep pace with road safety progress in other developed Western countries and make Canada's roads the safest in the world.



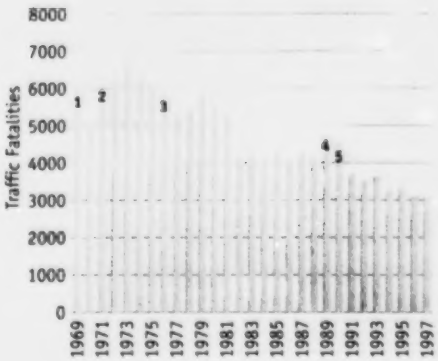
Road safety interventions of the past 30 years have halved the number of road users killed in Canada. However, almost 3,000 people still die in traffic collisions each year.

Road injuries alone drain the health care system of billions of dollars annually.

Since the inception of Vision 2001, deaths and injuries on Canada's roads have been steadily decreasing.

Certainly, it's safer to travel on Canadian roads now than it was 30 years ago. Nonetheless, traffic collisions kill almost 3,000 and injure approximately 220,000 road users annually, hospitalizing 18,000 of them.

Key Traffic Safety Interventions Have Reduced Fatalities



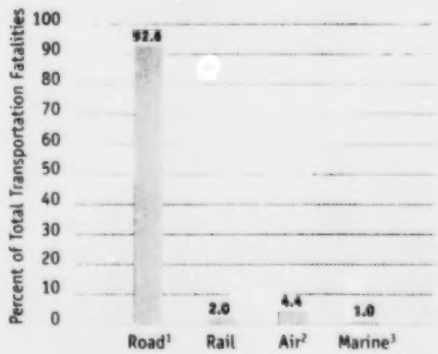
1. Drinking/Driving Laws Introduced
2. Key Canadian Motor Vehicle Safety Standards Introduced
3. Mandatory Seat Belt Use Laws Introduced
4. National Occupant Restraint Program Introduced
5. Strategy to Reduce Impaired Driving Introduced

While these tragedies have decreased by half over a period when the number of vehicles on the roads has doubled, these casualties are costing us heavily. First, road collisions usually kill people in the prime of life. Second, the injuries drain the health care system of billions of dollars annually.

canada's unique road safety challenge

Canada is unique among highly developed countries. It is one of the largest countries in the world, with one of the lowest population densities. Consequently, Canadians rely very heavily on motorized vehicles as a basic means of transportation. The public transportation alternatives that exist in many smaller, more densely populated countries simply do not exist in Canada. These factors, combined with extreme climatic conditions and the sharing of road safety among federal, provincial and territorial jurisdictions, all add to the challenge of making Canada's roads the safest in the world.

Fatalities by Mode of Transport – 1994-1998 Average



[1] Includes motor vehicle occupant fatalities at rail crossings.
[2] Includes Canadian- and foreign-registered aircraft.
[3] Excludes fatalities involving pleasure crafts.

Vision 2001 - We're moving forward....

Since Vision 2001 was inaugurated in 1996, five percent fewer road users have been killed and eight percent fewer have been injured in traffic crashes. Using the international measure of "deaths per registered motor vehicle," Canada's road safety has improved over this period by almost nine percent.

....But we aren't yet at the end of the road

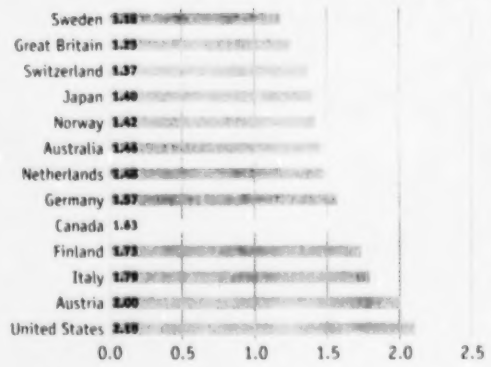
Even though the 1998 fatality rate dropped an impressive 6.3 percent over 1997 levels, Canada's position in the world road safety arena is slipping. For 1998, we have fallen from eighth to ninth among the world's most developed economies [the 29-member Organization for Economic Cooperation and Development (OECD)]. This is the second consecutive year that Canada, despite registering noteworthy improvements over the previous year's death rate, has lost ground to other nations. Why? Because other countries are implementing even more successful safety initiatives.

Ranking the countries: Fair measure?

The yardstick used to compare international road safety performance among countries is "deaths per registered motor vehicle."

Notwithstanding, comparing road safety records among countries is not a straightforward task. Factors as diverse as country size, road infrastructure, public transportation usage, economic conditions, population density, climate, culture, and travel patterns all have an impact on road safety statistics. These differences can make comparing international road safety a bit like comparing apples and oranges. Still, this simple measure is widely used because it is the only road safety indicator readily available in most countries.

Fatality Rates per 10,000 Motor Vehicles Registered (Selected OECD Member Countries – 1998)



The international yardstick used to rate countries' road safety performance is "deaths per registered motor vehicle."

In 1998; Canada's international ranking on road safety was ninth among the world's 29 OECD member countries.

Countries that rank above Canada have come out with tough programs to reduce road carnage.

Tough safety programs in other countries

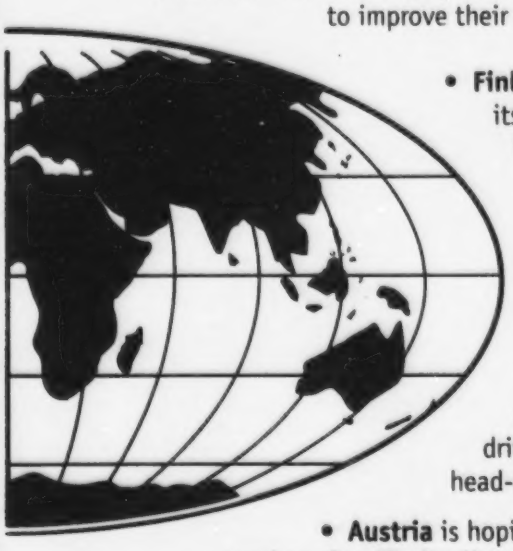
The countries with the world's best safety records have, for the most part, adopted tough but achievable targets to maintain or improve their position as the world's road safety leaders.

- **Sweden** has adopted campaigns targeting high risk drivers; created safer road environments in urban and rural areas; and improved emergency medical response services to help realize its Vision Zero initiative, where the ultimate goal is that no one be killed or seriously injured in traffic collisions.
- **Great Britain** has already surpassed its year-2000 targets for fatality and serious-injury reductions; has introduced enhanced anti-impairment initiatives that focus not only on alcohol but also on drugs and fatigue; road infrastructure improvements; traffic calming; and incentives for increased pedestrian and cyclist traffic.

- **Switzerland** has used seat belt public education campaigns; introduced a graduated licensing system for new drivers; improved road infrastructure and technology; and increased police enforcement to help it achieve its fatality reduction targets and its Vision Zero objective.
- **Japan** has made improvements in roads infrastructure and emergency medical response services as well as focused public education campaigns to enable it to achieve its targeted fatality reductions for the year 2000.
- **Norway** has reduced speed limits on selected "high risk" roads; increased police enforcement; and introduced photo radar and a national transportation plan that encompasses all modes of travel.
- **The Netherlands** has adopted a multifaceted program called Sustainable Road Safety that attempts to adapt road networks to the limitations of road user capabilities; calls for vehicles to be equipped with devices that make driving easier; informs and educates road users; and focuses campaigns on drinking and driving, non-use of seat belts and speeding.

- **Australia** is aiming to achieve its ambitious target of halving its road fatality rate by 2010 by implementing lower maximum speed limits on non-arterial urban streets; improving driver monitoring procedures; targeting repeat drinking and driving offenders; and equipping all new vehicles with sensors that detect when seat belts are not being used and prevent the vehicle from starting.
- **Germany** has adopted a lower legal limit for driving and drinking (50 mg percent), substantially improved its roads infrastructure; and is adopting a national transportation plan.

Countries that rank closely behind Canada also have targets to improve their road safety performance:



- **Finland**'s goal is to reduce its annual number of traffic fatalities by 25 percent by 2005 by adopting a number of programs that aim to curb the growth in traffic; improve road safety in built-up areas; improve interaction among road users; reduce drinking and driving and run-off-road and head-on collisions.
- **Austria** is hoping to reduce the annual number of traffic fatalities by 40 percent and injuries by 20 percent by 2005, by decreasing speed limits on rural roads; increasing penalties for non-users of seat belts; reducing the legal blood alcohol content (BAC) limit to 50 mg percent for the general population and to zero for novice drivers; and improving cycling paths and pedestrian safety zones.
- The **United States** is hoping to increase seat belt and proper child restraint use to 90 percent by 2005 by emphasizing enhanced enforcement and education campaigns; reduce alcohol related fatalities by 35 percent by 2005 by conducting comprehensive national and community outreach programs; and expand the 'safe communities initiative' through extensive networking and partnerships at the local community level.

Other countries, now ranking closely behind Canada, are also making their roads safer through the adoption of broad-based road safety initiatives.

Canada's road fatality rate has been steadily decreasing, despite increasing numbers of motor vehicles.

Two major Vision thrusts are directed at those who don't buckle up or who drink and drive. Vision goals include a 95 percent seat belt wearing rate and 20 percent fewer alcohol-related deaths and serious injuries by 2001.

Vision 2001 at work

Since Vision 2001 was adopted, a plethora of road safety initiatives ranging from the national to community level have been initiated. Most efforts have been directed toward major safety issues — the non-use of seat belts and drinking and driving — and, to a lesser extent, toward vulnerable road users, such as pedestrians.

Traffic Collision Fatality Rates vs. Motor Vehicle Registrations – Canada: 1970-1998

Two of the major national Vision 2001 thrusts are the **National Occupant Restraint Program 2001** (NORP 2001), with a goal to get 95 percent of motorists to wear seat belts and properly restrain their children by 2001; and the **Strategy to Reduce Impaired Driving 2001** (STRID 2001), which aims for 20 percent fewer road users to be killed or seriously injured in alcohol-related crashes in 2001, compared with the average 1990-1995 baseline period. These umbrella programs encompass some of the initiatives described on the following pages.

Other successful ongoing jurisdictional or community-based initiatives include those focusing on deterring speeding in designated community safety zones, school bus safety, winter driving, holiday congestion, cyclists, and pedestrians.

Some of the more noteworthy initiatives that were developed or adopted during 1999 in support of the four tenets of the Vision are outlined below.

1. Increasing public awareness of road safety issues

To generate road safety awareness at an early age, Transport Canada and its partners produced and distributed an engaging promotional video on the proper use of child restraints. **Car Time 1-2-3-4** targets both parents and children aged 12 years or under, using stand-alone

segments to explain the four stages of vehicle safety for children. The video shows how and when to use rear-facing infant seats, forward-facing child seats, booster seats, and seat belts to protect children during travel. A facilitator's guide with information on how to install and use child restraint systems is also included.

Several provinces have adopted a program for novice drivers that enables them to acquire driving skills gradually in low-risk driving situations. Called a **graduated licensing system**, the program was first adopted in a single Canadian province in 1994. Six provinces, encompassing more than 80 percent of the nation's population, now require novice drivers to participate in the program.

Although the program elements vary somewhat among jurisdictions, the scheme requires apprentice drivers to follow a two-tiered licensing schedule, with built-in driving restrictions and one or more driving tests, depending on the jurisdiction, before full driving privileges are granted. The program applies to all new drivers of passenger vehicles and motorcycles.

The first stage in a graduated licensing system usually lasts between six and 12 months. Licensing conditions may include operating only a passenger vehicle; being accompanied in the front seat by a fully licensed driver with a specified minimum driving experience; driving with a zero blood alcohol concentration (BAC); respecting a nighttime driving curfew; and not driving on divided highways or urban expressways.

In the second stage of a graduated system, there are still driving limitations, though less restrictive than the first stage. Drivers may be limited to operating only passenger vehicles and maintaining a zero BAC. In order to receive full driving privileges, apprentice drivers may be required to pass their second-step driving test within a maximum time period, which can last up to five years. Otherwise, they have to restart the program from the beginning.

New drivers may also be required to maintain a safe driving record for the duration of the graduated licensing program or complete a defensive driving course.

Preliminary evaluation studies conducted in some provinces with graduated licensing have shown the program to be very effective. Collision rates among novice drivers fell between 19 and 31 percent. These rates included a 24 percent decrease for crashes involving fatalities or injuries in one province. In another, fatalities fell 28 percent and injuries by 10 percent among beginner drivers.

Tragically, almost 30 percent of young children (0-4 years) killed in passenger vehicles might have lived if they had been properly buckled in.

Graduated licensing programs are helping novice drivers acquire driving skills gradually in low-risk situations.

Almost half of unbelted drivers who died in crashes were ejected from their vehicles. During Operation Impact, front-line police officers help the public understand that seat belts save lives.

The 10 percent of motorists who refuse to buckle up account for 40 percent of all occupants killed and 21 percent of those seriously injured.

An on-line database spreads the word of winning traffic safety initiatives, all developed by police officers.

Versions of graduated licensing programs have been implemented in New Zealand and Australia. Switzerland is currently introducing the program for new drivers.

Operation Impact is a national one-day traffic safety initiative sponsored by the Canadian Association of Chiefs of Police (CACP). Begun in 1990, more than 220 police forces across the country now participate. During the 1999 Operation Impact, national, provincial and municipal police forces held a one-day blitz in which almost 350,000 motorists were stopped and checked for non-use of seat belts and, in some instances, tested for alcohol use.

The principal thrust of Operation Impact is to enable front line police officers to raise awareness of the risks of not wearing seat belts and of drinking and driving. In many jurisdictions, Operation Impact is also the start of more extensive education and enforcement campaigns targeting non-wearers of restraints. In preparation, police officers are provided with helpful risk-related information to deliver to motorists. This year, the key message focused on recent research showing that 40 percent of all fatally injured occupants were not wearing seat belts.

Victim Type	Average 1993-1996 % Unbelted	1997 % Unbelted
Drivers Killed	40.2	37.3
Drivers Seriously Injured	18.2	16.5
Passengers Killed	41.4	41.0
Passengers Seriously Injured	25.8	23.9
Children Killed (0-4 yrs.)	31.7	29.3
Children Seriously Injured	24.5	15.7

This year, the CACP also produced a nationally televised video called *Behind the Badge*, outlining the Operation Impact objectives and principal messages. The initiative received extensive national and local media coverage.

Transport Canada, in partnership with the CACP and other public agencies, has created an on-line **Traffic Safety Best Practices Data Base**. The database, housed on Transport Canada's Road Safety web page (www.tc.gc.ca/roadsafety), contains a broad range of outstanding community-based traffic safety strategies, all developed by police officers. These on-line strategies give Canada's police community and other road safety stakeholders easy access to proven problem-solving techniques.

2. Improve communication, cooperation and collaboration

The Royal Canadian Mounted Police (RCMP), with the assistance of Transport Canada and in partnership with transport, health and regional agencies from the province of Alberta, are jointly involved in a pilot study called the **Community Policing Project**. The primary objective of this initiative is to develop, implement and evaluate a community policing protocol that will enhance the quality of traffic policing. If successful, this program will be used as a template in other jurisdictions.

In 1998, as a preamble to this project, the RCMP established a new mission statement — to "improve public safety on our highways." Front-line officers involved in the study have been educated about the nature and consequences of high-risk driving behavior, and the utility of traffic collision data in problem-solving and in measuring performance.

A rural seat belt use survey was carried out as part of the pilot project. Both the RCMP and community volunteers participated to establish baseline data necessary to plan effective programs to increase seat belt use.

The Community Policing Project has the potential to change the way police in communities do their work — the data collection process is being revised; focus groups involving front-line police officers and other road safety stakeholders are being established; resources are being realigned to provide more focused enforcement; and training modules and performance measures are being developed. It is anticipated this project will enable police forces and road safety stakeholders to work as partners, identifying and resolving road safety problems consistent with community priorities.

The Alberta Community Policing Project has the potential to change the way communities and police work to resolve road safety problems.

The National Safety Code is the foundation for commercial bus and truck safety in Canada. Recent and proposed NSC changes affect cargo securement, hours of service for drivers and carrier safety ratings.

Provinces and territories use the 15 standards of the **National Safety Code** (NSC) as the national template for regulating truck and bus safety.

Commercial truck activity has increased steadily over the past five years, while fatalities in crashes involving these vehicles have remained relatively constant at 18 percent and serious injuries at eight percent. An increase occurred, however, during 1997, the most recent year for which there is data, when fatalities rose by 22 percent and serious injuries by 10 percent.

It is anticipated that the safety performance of commercial vehicle transportation will be further strengthened by recent and proposed changes to several National Safety Code standards:

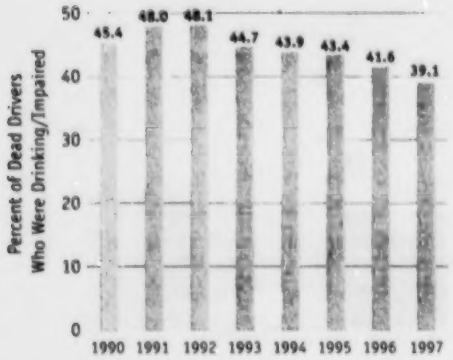
- A new North American cargo-securement standard that aims to reduce the incidence of shifting or falling loads.
- Proposed revisions to the basic elements of the commercial vehicle drivers hours of service regime. Upon final approval of the revised NSC standard, changes to the federal and provincial/territorial regulations will be considered.
- Amendments to the *Motor Vehicle Transport Act* that include safety fitness provisions founded on the new NSC standard — safety ratings. This standard ascribes a safety performance rating to every commercial bus and truck carrier. Also under revision is the companion NSC standard pertaining to facility audits — the examination of motor carriers' safety practices and record keeping.

3. Toughen enforcement measures

The primary focus of road safety enforcement agencies across Canada continues to be increasing seat belt usage rates, decreasing the incidence of drinking and driving, and deterring those who speed or run red lights.

Some noteworthy initiatives introduced or enhanced in various jurisdictions during 1999 include **administrative driver license suspensions**. These suspensions are used for drivers who are charged with, but not yet convicted of, driving over the legal blood alcohol limit. Effective suspension dates range from immediately at the roadside to three months, depending on the jurisdiction.

Although many programs are in place to curb drinking and driving, progress has been slow



Other counter-impairment initiatives include:

- A program of immediate vehicle impoundment for suspended drivers caught driving; and
- A drug recognition program that involves specialized training for police officers to enable them to recognize drivers who are drug impaired.

Some jurisdictions have also introduced cameras at busy intersections to deter drivers from running red lights. Others discourage speeding by using photo radar and increasing police visibility in urban community safety zones or on roads where high numbers of serious collisions occur.

Road safety enforcement agencies are focusing on high-risk drivers — those who drive unbuckled, drink and drive, speed, or run red lights.

Almost three of four unbelted drivers killed or seriously injured in night-time crashes had also been drinking or were impaired.

There's a link among high-risk driving behaviours.

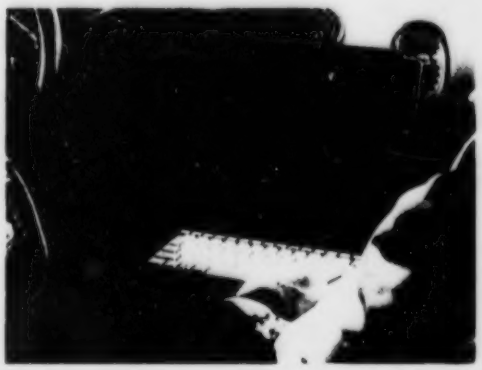
The Canadian Vehicle Use Survey will help decision makers better understand the types of vehicles on the roads, who drives them, how far they travel and what they carry.

Governments and other key traffic safety stakeholders are partnering to evaluate STARS – an electronic traffic collision data collection system.

In 1999, the House of Commons Standing Committee on Justice and Human Rights held public hearings across Canada and issued a report outlining several recommendations aimed at further deterring drivers from drinking and driving. Many of the principal recommendations of the report were subsequently passed into law. These included increasing penalties and sentencing options in the **Criminal Code** and raising the maximum penalty for impaired driving causing death to life imprisonment.

4. Improve data collection and quality

In 1999, Statistics Canada conducted the first **Canadian Vehicle Use Survey** on behalf of Transport Canada to obtain annual estimates of the amount of road travel in this country. The survey, which will be undertaken annually, includes data on the annual number of kilometres driven by all major vehicle types; age and gender of drivers; number of passengers carried; time of day and season; types of road travelled; and volume and types of goods that commercial vehicles transport.



The survey information will be used to monitor vehicle-use changes over time, as well as to monitor how vehicle use affects safety, fuel consumption and the environment. Survey results will also provide risk management indicators to help develop more informed safety initiatives and policies. More accurate interprovincial and international road safety comparisons will also be possible from previously unavailable national vehicle kilometrage data.

In partnership with selected provincial governments, public insurance companies and police agencies, Transport Canada is conducting a feasibility study of a computer- and communications-based system called the **System for Technological Applications in Road Safety** (STARS). This multifaceted technological platform has many potential uses, including the automated on-site collection of all traffic collision data; access to licence, registration and insurance files; ticketing and on-site collection of fines using bank credit cards; and scheduling court appearances.

The STARS feasibility study is intended to provide a national focus for the development of uniform automated data collection performance standards. Adopting STARS would improve the efficiency, quality and timeliness of traffic collision data collection and would facilitate data interchange to develop national road safety programs.

Researchers are continually attempting to make motor vehicles safer by developing new, or revising existing, **safety regulations**.

Canadian and U.S. standards have resulted in most newer vehicles being equipped with redesigned front seat air bags that have a lower inflation force. Transport Canada researchers are also working with American and European officials to develop a side-impact testing procedure that would use an instrumented dummy that is accepted worldwide.

The rapidly changing composition of Canada's motor vehicle fleet, which now includes a large number of sport utility vehicles, has spawned research to ascertain the crash compatibility of these larger vehicles with smaller cars.

Road infrastructure improvements form an integral part of the road safety equation. In 1999, the **Geometric Design Guide** for Canadian Roads was revised to incorporate safety considerations into road design, placement of new traffic signs and pavement markings.

The current focus of the newly created Road Safety Sub-Committee, which operates within the framework of the Transportation Association of Canada, is with the creation of national guidelines for **road safety audits** and for continuous road-shoulder **rumble strips** — two economical infrastructure safety measures.

Road safety audits involve the application of safety principles to the design of new or modified roads to reduce the likelihood of collisions or to decrease their severity when they do occur. Safety audit procedures have been successfully used in Great Britain, Denmark, Australia and New Zealand for several years. Pending an approval process, the national template for routine application of safety audit procedures should be available in Canada in the near future.

Increasingly, the tendency is towards international partnering to develop or revise motor vehicle safety regulations on a global scale.

Two economical safety measures include creating national guidelines for safety audits of roads and for continuous road-shoulder rumble strips.

Canadian road safety is improving; but the rate of change must increase if we are to move ahead of our global counterparts.

Vision 2001 success lies in the continued cooperation and commitment of Canada's road safety leaders.

Rumble strips are raised or grooved patterns on the road shoulder that provide both an audible warning and physical vibration alerting drivers that they are leaving the road. Rumble strips, which have been installed on selected roadways in Canada, have proven to be inexpensive and highly effective in reducing run-off-road crashes in the United States.

Future directions

Road Safety Vision 2001 initiatives have sparked improvements in Canada's road safety performance. However, Canada continues to face stiff challenges from other world leaders in traffic safety as their level of safety continues to improve even more rapidly than Canada's.

Enhanced awareness, cooperation and commitment by the Canadian road safety community and greater acceptance of new or existing road user, vehicle or road network initiatives by the motoring public are key if Canada is eventually to attain its goal of having the world's safest roads.

The year 2001 is rapidly approaching. The safety improvements realized since inception of Vision 2001 suggest that Canada may not be successful in achieving its goal by 2001. Canada is not alone in this regard. In the past, several European countries have established extremely ambitious goals and not achieved them within their originally specified time frame. They were more successful, however, with subsequent targeting efforts. Canadian road safety stakeholders are now developing post-2001 targets to ensure that road safety improvements continue to move Canada towards having the world's safest roads.